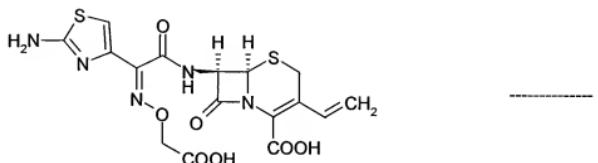


CLAIMS

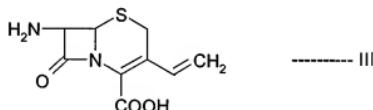
We claim:

1. A process for preparing cefixime of formula I:

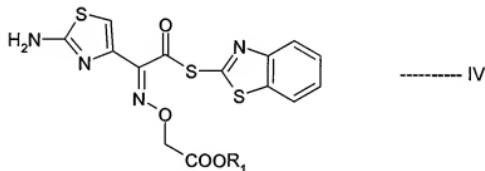


which comprises,

a) reacting 7-amino-3-vinyl-3-cephem-4-carboxylic acid of formula III:



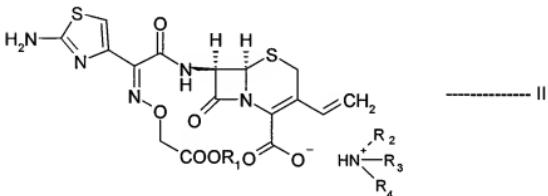
with a thiazolyl acetic acid derivative of formula IV:



wherein R_1 represents lower alkyl in a mixture of water and non-protic water miscible solvent in the presence of a base of formula V:



wherein R₂, R₃ and R₄ independently of each other represents hydrogen, alkyl, cycloalkyl, alkylaryl, aryl or aralkyl to obtain a reaction mass comprising the compound of formula II:



wherein R_1 , R_2 , R_3 and R_4 are as defined above;

- b) extracting the reaction mass of step (a) with ethyl acetate or methylene dichloride and separating the aqueous layer;
- c) hydrolyzing the salt of formula II present in the separated aqueous layer using an aqueous alkali metal hydroxide solution at about 0 - 15°C;
- d) adding an acid immediately after completion of hydrolysis reaction to adjust the pH to about 4.5 to 8.0; and
- e) crystallizing cefixime of formula I by adjusting the pH of the resulting solution of step(d) to about 2.0 to 3.5 with an acid and cooling if required.

2. The process according to claim 1, wherein the reaction in step (a) is carried out at below about 15°C.

3. The process according to claim 2, wherein the reaction is carried out at about 0 - 10°C.

4. The process according to claim 1, wherein the non-protic water miscible solvent is selected from tetrahydrofuran, acetone, dimethylsulfoxide and a mixture thereof.

5. The process according to claim 4, wherein the non-protic water miscible solvent is tetrahydrofuran.

6. The process according to claim 1, wherein R_2 , R_3 and R_4 of formula V independently of each other represent hydrogen, alkyl or cycloalkyl.
7. The process according to claim 1, wherein the base is selected from triethylamine, trimethylamine, tributylamine and n-butylamine.
8. The process according to claim 1, wherein the quantity of the base of formula V used is at least about 1 mole per mole of compound of formula III.
9. The process according to claim 8, wherein the quantity of the base of formula V used is about 1 to 1.4 moles per mole of compound of formula III.
10. The process according to claim 1, wherein the solvent used in step (b) is ethyl acetate.
11. The process according to claim 1, wherein the hydrolysis reaction in step (c) is carried out at about 0 - 10°C.
12. The process according to claim 1, wherein the alkali metal hydroxide is sodium hydroxide or potassium hydroxide.
13. The process according to claim 1, wherein the quantity of alkali metal hydroxide is at least about 2 moles per mole of the compound of formula III.
14. The process according to claim 13, wherein the quantity of alkali metal hydroxide is about 2.5 to 4.0 moles per mole of the compound of formula III.
15. The process according to claim 14, wherein the quantity of alkali metal hydroxide is about 2.8 to 3.5 moles per mole of the compound of formula III.
16. The process according to claim 1, wherein the pH of the reaction mass in step (d) is adjusted to about 4.5 to 6.0 with an acid.
17. The process according to claim 1, wherein the acid used in step (d) is selected from aqueous hydrochloric acid, aqueous sulfuric acid and aqueous phosphoric acid.
18. The process according to claim 17, wherein the acid is aqueous hydrochloric acid.
19. The process according to claim 1, wherein the acid in step (e) is selected from aqueous hydrochloric acid and aqueous sulfuric acid.
20. The process according to claim 19, wherein the acid is aqueous hydrochloric acid.

21. The process according to claim 1, wherein the cefixime crystallized in step (e) is as cefixime trihydrate of formula Ia:

